



# Exhibit 10

**U.S. Patent No. 6,862,179 – Infringement Claim Chart**

Claim 1	Exemplary Evidence of Infringement by CyrusOne
<p>[1pre] A method of cooling a plurality of racks in a data center, said method comprising:</p>	<p>CyrusOne’s data centers use a method of cooling a plurality of racks in a data center.</p> <p>For example, CyrusOne uses Vertiv (Liebert) downflow chilled water CRAC units in the colocation data center. Liebert CRAC units are controlled by Liebert’s iCOM Intelligent Communication and Monitoring system.</p> <div data-bbox="787 570 1026 893"> <p><b>CIN99</b></p> <p>CyrusOne Data Center Cincinnati - Blue Ash 4600 McAuley Place, 4th Floor Cincinnati, OH 45242</p> <p>Located on McAuley Place, this Cincinnati data center facility is for customers that require a robust data center for mission-critical applications, as well as for disaster recovery and business continuity environments.</p> </div> <div data-bbox="1066 574 1892 1151">   <p><b>Overview</b></p> <ul style="list-style-type: none"> <li>• 15,000 sq. ft. data center/8,000 colo square feet (CSF)</li> <li>• Up to 900 kW available</li> <li>• 12-inch raised floor design</li> <li>• 20, and 22 ton Liebert Downflow Chilled Water CRAC units.</li> </ul> </div> <p><a href="https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf">https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf</a>, p. 1.</p>

## Cooling

- N+1 Cooling
- Redundant DX and Glycol Chillers
- Redundant raised floor CRAC units
- 12in Raised floor

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[https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97\\_Cincinnati.pdf](https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf), p. 2.



**VERTIV™**

**Liebert®**

iCOM™ Thermal System Controls

Greater Data Center Protection,  
Efficiency & Insight

<https://www.vertiv.com/49d637/globalassets/shared/liebert-icom-thermal-system-controls-brochure.pdf> (“iCOM Brochure”).

**At the cooling unit level**, the Liebert iCOM unit control provides the highest protection available and optimal performance.

- Monitors 380 unit and component points to eliminate single points of failure
- Self-healing features avoid passing unsafe operating thresholds
- Highly intuitive, full-color, touch screen simplifies operations to save time and reduce human error
- Multiple, automated unit protection routines, including lead/lag, cascade, rapid restart, refrigerant protection and valve calibration



**At the supervisory level**, the Liebert iCOM-S system control offers a revolutionary way to harmonize and optimize thermal system performance to optimize capacity across the data center, gain quick access to actionable data, and automate system diagnostics and trending.

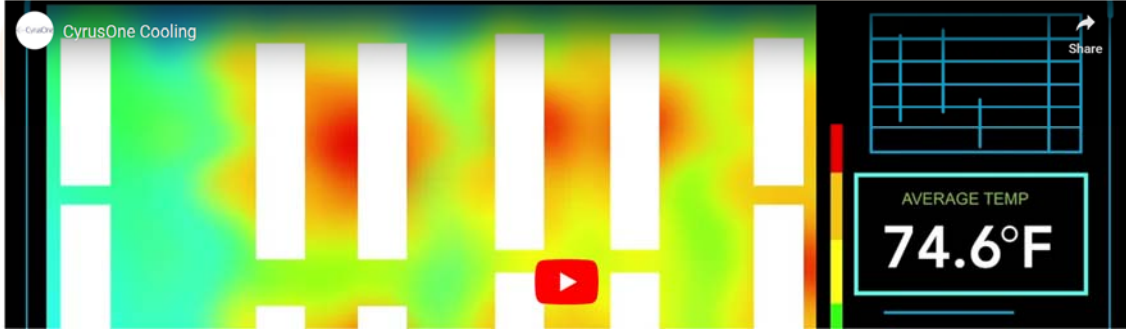
- Advanced monitoring and at-a-glance reporting on performance metrics and trends for efficiency, capacity and adverse events
- Up to 50% system efficiency gains
- 30% lower deployment costs
- Teamwork modes that prevent conflict between units and allow them to adapt to changes in facility and IT demand to improve efficiency and availability and reduce system wear and tear – saving more than \$10,000 per unit per year in energy costs
- Simple and easy to deploy — auto-configuration to detect and configure up to 4,800 sensors, eliminating the need for custom integration to building management systems and cutting sensor deployment times in half



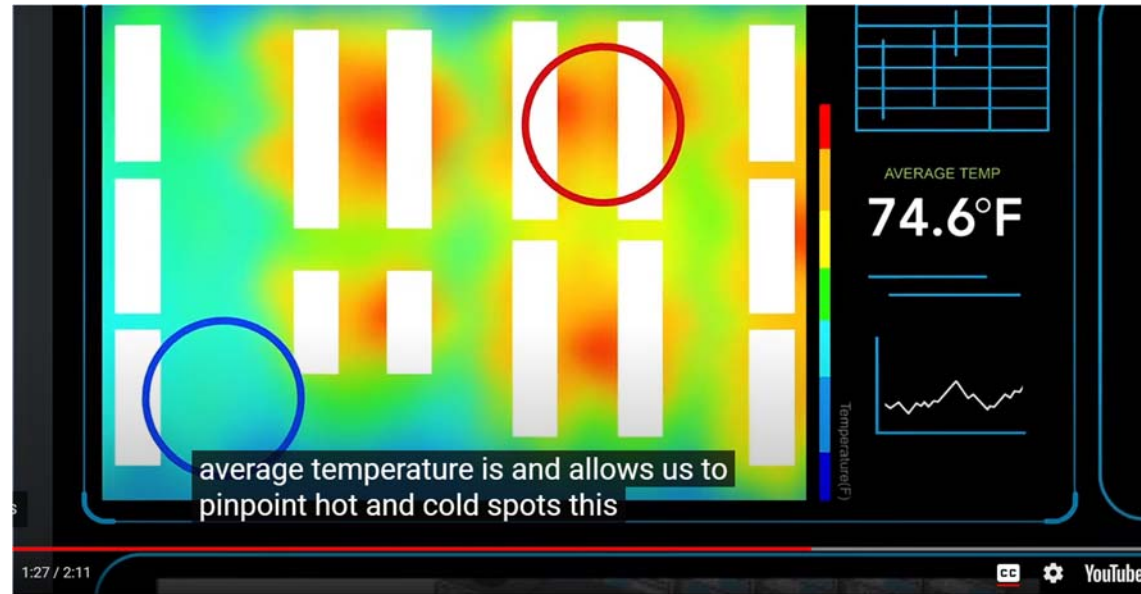
Liebert iCOM unit control and Liebert iCOM-S system control are available for new Vertiv™ data center cooling units or as retrofits.

iCOM Brochure at p. 3.

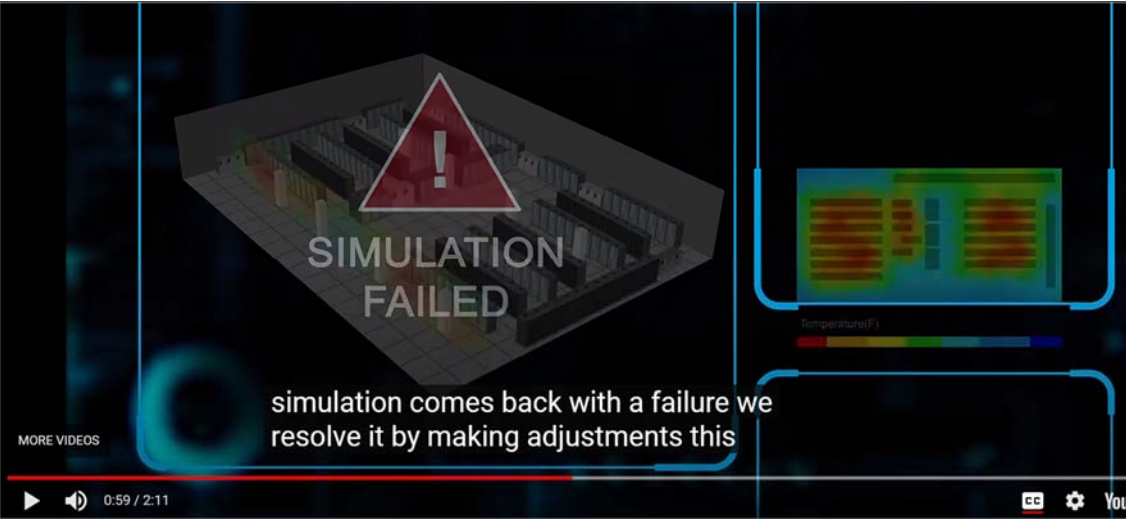
CyrusOne also uses CyrusOne cooling to continuously optimize air flow in its colocation data centers.

	<p>CyrusOne's data center cooling systems are some of the most advanced in the world employing proactive and reactive methods to keep customer's data halls running at the most optimal temperatures.</p>  <p><a href="https://www.cyrusone.com/data-center-solutions/colocation">https://www.cyrusone.com/data-center-solutions/colocation</a>.</p>
<p>[1a] activating a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks;</p>	<p>CyrusOne activates a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks.</p> <p>For example, Liebert's iCOM Intelligent Communication and Monitoring fluid economizer system activates the flow of chilled water/glycol, and varies cooling capacity by adjusting a motorized ball valve (controllable partition).</p> <p><b>7.1.4 Temperature Control with a Fluid Economizer</b></p> <p>When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.</p> <p>The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.</p> <p><a href="https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf">https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf</a>, p. 110.</p>

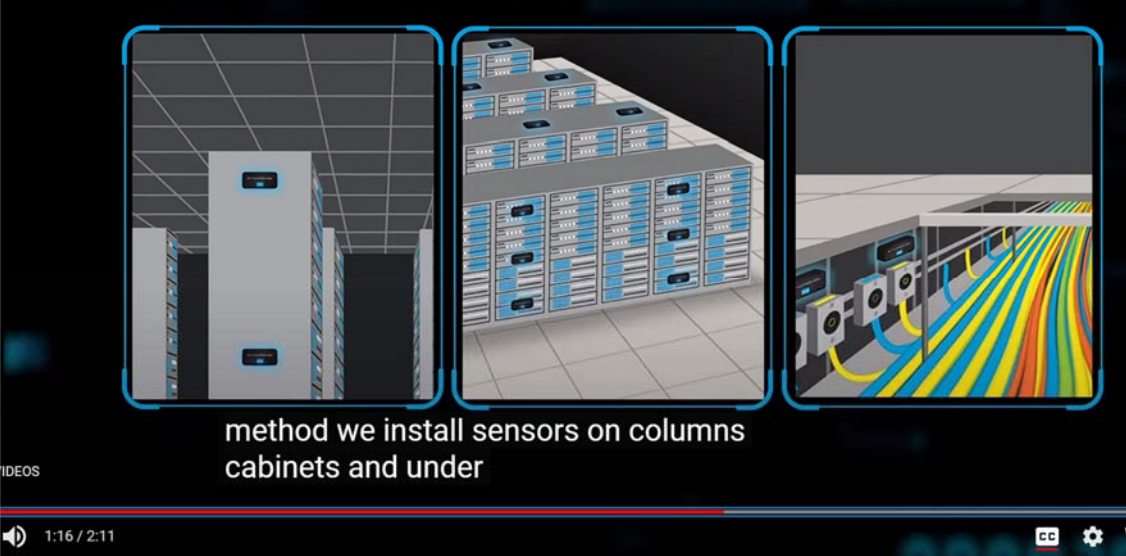
CyrusOne also uses CyrusOne Cooling which is a closed-loop system that reacts to real-time data, automatically identifies and eliminates hot spots and helps diagnose potential facility risks by making adjustments.



<https://www.cyrusone.com/data-center-solutions/colocation>, at 1:27.


	 <p><a href="https://www.cyrusone.com/data-center-solutions/colocation">https://www.cyrusone.com/data-center-solutions/colocation</a>, at 0:59.</p>
<p>[1b] sensing the temperature of said at least one associated rack;</p>	<p>CyrusOne senses the temperature of said at least one associated rack.</p> <p>For example, CyrusOne uses Liebert cooling units and the Liebert cooling unit control system senses temperatures.</p> <p><b>13.2 Installing Wired Remote Sensors</b></p> <p>Up to 10 remote sensor modules, installed in the monitored racks and connected to the cooling unit, provide control and reference input to iCOM and building-management systems. Using remote, rack sensors combats cooling problems related to recirculation air, uneven rack loading, and air distribution.</p> <p><a href="https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf">https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf</a>, p. 180.</p> <p>CyrusOne also uses CyrusOne cooling which installs temperature sensors to determine exactly where the heat load is within the data center. Data is wirelessly transmitted to network gateways, aggregated, and sent to a purpose-built appliance where it is analyzed by control software. Control commands are then delivered to the cooling equipment.</p>



	 <p>method we install sensors on columns cabinets and under</p> <p><a href="https://www.youtube.com/watch?v=yFMS-88wXn8">https://www.youtube.com/watch?v=yFMS-88wXn8</a>, at 1:16.</p>
<p>[1c] determining whether said sensed temperature is within a predetermined temperature range; and</p>	<p>CyrusOne determines whether said sensed temperature is within a predetermined temperature range.</p> <p>For example, CyrusOne uses the Liebert iCOM system which is able to identify if the temperature is at the setpoint value, and change the response to the varied flow field based on length of time temperature has deviated, and amount of deviation from setpoint.</p>

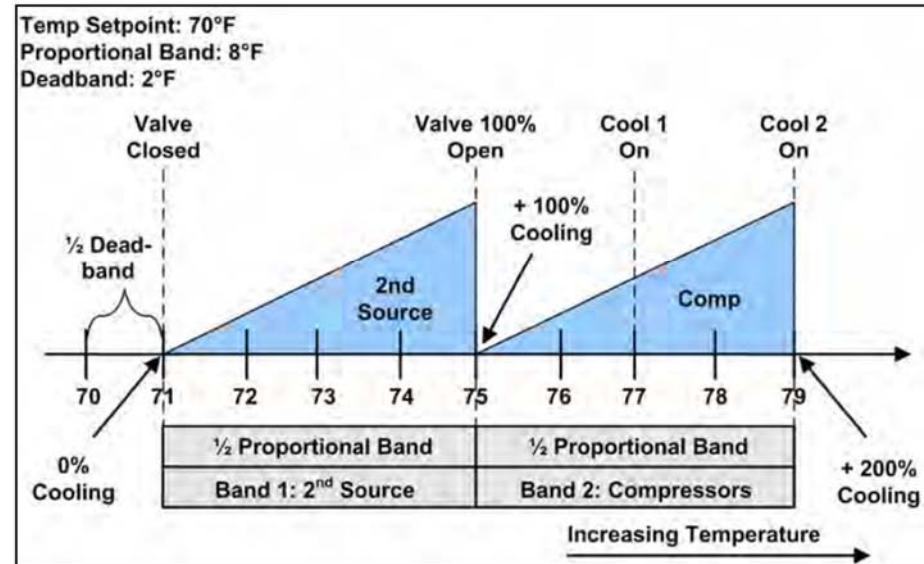


	<p><b>Temperature Integration Time</b></p> <p>Adjusts amount of cooling/heating based on the length of time the temperature has deviated from the setpoint. The time selected is the amount of time it will take cooling capacity to reach 100%. For example, if three minutes is selected, cooling capacity will increase to 100% in three minutes.</p> <p>NOTE: Three to five minutes of integration time is adequate for most applications. See <a href="#">Considerations when Using PI Temperature Control</a> on page 28 .</p> <p>NOTE: Only used when Temperature Control Type is PI.</p> <p><b>Temperature Proportional Band</b></p> <p>Adjusts the activation point of cooling/heating components based on deviation from setpoint by placing half of the selected value on each side of the temperature control setpoint. A smaller number causes faster reaction to temperature changes.</p> <p>NOTE: Setting this too low causes short cycling of compressors.</p> <p><a href="https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf">https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf</a>, p. 25.</p> <p>CyrusOne also uses CyrusOne Cooling to determine whether the sensed temperature is within a predetermined temperature range, for example, by using hot and cold spots.</p>
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	 <p><a href="https://www.cyrusone.com/data-center-solutions/colocation">https://www.cyrusone.com/data-center-solutions/colocation</a>, at 1:27.</p>
<p>[1d] manipulating said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.</p>	<p>CyrusOne manipulates said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.</p> <p>CyrusOne uses Liebert's iCOM system to manipulate the motorized ball valve (controllable partition) from 0% to 100% flow of chilled water/glycol.</p> <p><b>7.1.4 Temperature Control with a Fluid Economizer</b></p> <p>When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.</p> <p>The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.</p>

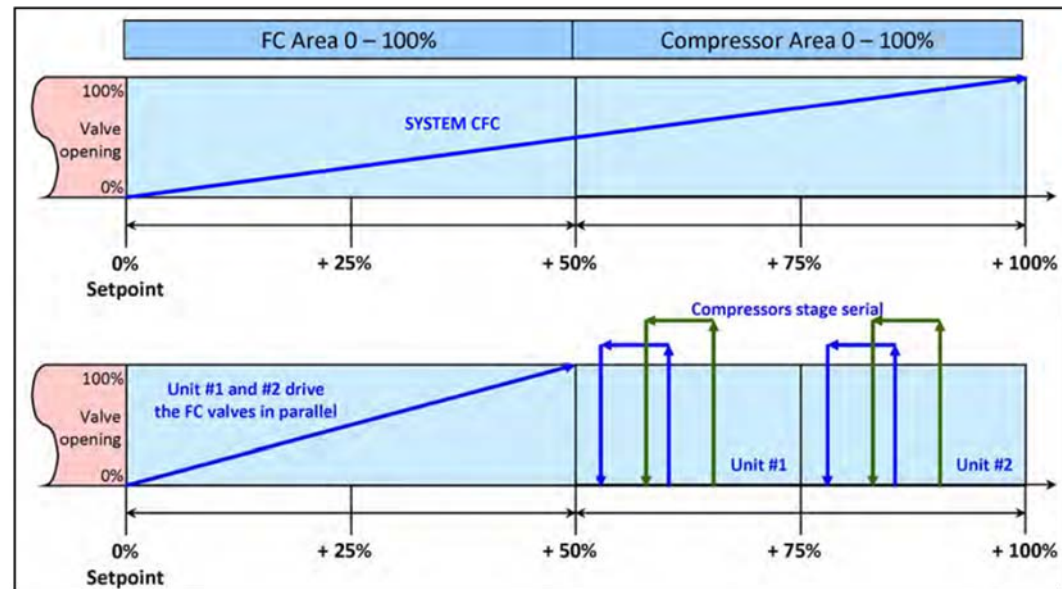
[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 110.

Figure 3.17 Second Cooling Source and Two-Step Compressorized Cooling



[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 69, Fig. 3.17.

Figure 3.18 Freecooling and Compressorized Operation



[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 70, Fig. 3.18.

CyrusOne also uses CyrusOne Cooling Optimize to adjust cooling output by fine-tuning the air flow.

